Milestone Review Flysheet

Institution	Tarleton State University

Milestone	PDR

Vehicle Properties	
Total Length (in)	120"
Diameter (in)	6"
Gross Lift Off Weigh (lb)	49.11
Airframe Material	G12 Fiberglass
Fin Material	G10 Fiberglass
Coupler Length	6"

Motor Properties	
Motor Designation	L2200G
Max/Average Thrust (lb)	696.94/494.58
Total Impulse (lbf-s)	1147.42
Mass Before/After Burn	167.36/88.75
Liftoff Thrust (lb)	562.14
Motor Retention	Quick Change Flange Mount

Stability Analysis	
Center of Pressure (in from nose)	92.6292"
Center of Gravity (in from nose)	79.1482"
Static Stability Margin	2.18
Static Stability Margin (off launch rail)	2.57
Thrust-to-Weight Ratio	10.07:1
Rail Size and Length (in)	1515 10'
Rail Exit Velocity	83.183

Ascent Analysis	
Maximum Veloxity (ft/s)	681.57
Maximum Mach Number	0.606
Maximum Acceleration (ft/s^2)	1844.57
Target Apogee (From Simulations)	5280'
Stable Velocity (ft/s)	48
Distance to Stable Velocity (ft)	2.86'

Recovery System Properties	
Dogue Parachute	
Manufacturer/Model	b2 Rocketry/SkyAngle Cert 3
Size	Drogue - 21.8'
Altitude at Deployment (ft)	Apogee
Velocity at Deployment (ft/s)	0
Terminal Velocity (ft/s)	120
Recovery Harness Material	Kevlar
Harness Size/Thickness (in)	1/2"
Recovery Harness Length (ft)	30'

Recovery System Properties	
Main Parachute	
Manufacturer/Model	b2 Rocketry/ SkyAngle Cert 3
Size	XXL - 105"
Altitude at Deployment (ft)	500'
Velocity at Deployment (ft/s)	120
Terminal Velocity (ft/s)	15
Recovery Harness Material	Kevlar
Harness Size/Thickness (in)	1/2"
Recovery Harness Length (ft)	30'

Harness/Airframe Interfaces		Parachute is tied to Kevlar shock cord. The Kevlar shock cord is tied to U-Bolts which are bolted to bulkplates with backing plate. Bulkplates, with the exception of AV Bay lids, are epoxied in using Proline 4500.		
Kinetic Energy of Each Section (Ft-lb)	Section 1	Section 2	Section 3	Section 4
	2301.27	2675.12	3790.93	

Harness/Airframe Interfaces		Parachute is tied to Kevlar shock cord. The Kevlar shock cord is tied to U-Bolts which are bolted to bulkplates with backing plate. Bulkplates, with the exception of AV Bay lids, are epoxied in using Proline 4500.		
Kinetic Energy of Each Section (Ft-lb)	Section 1	Section 2	Section 3	Secti on 4
	40.55	47.16	66.80	

Recovery Electonics	
Altimeter(s)/Timer(s) (Make/Model)	StratoLogger CF
Redundancy Plan	One extra StratoLogger CF
Pad Stay Time (Launch Configuration)	10 Hours

Recovery Electonics	
Rocket Locators (Make/Model)	Garmin DC50
Transmitting Frequencies	151,880 MHz
Black Powder Mass Drogue Chute (grams)	4
Black Powder Mass Main Chute (grams)	4

Autonomous Ground Support Equipment (MAV Teams Only)	
Capture Mechanism	Overview
Container Mechanism	Overview
Launch Rail Mechanism	Overview
	Include Description of rail locking mechanism

Igniter Installation Mechanism	Overview

Payload	
Payload 1	Overview
Payload 2	Overview

Test Plans, Status, and Results	
Ejection Charge Tests	Ejection charge tests are an important part of this project and used to ensure that premature deployment doesn't happen during flight as well as to keep stress of the recovery system at a minimum. All tests will be scheduled the day before a test launch.
Sub-scale Test Flights	A minimum of two sub-scale test flight will be scheduled. All sub-scale test flights will happen prior to anu full-scale test flight.
Full-scale Test Flights	No full-scale test flight will occur until a successful sub-scale flight has been completed. The first few full-scale flights will be focused on a successful flight and recovery. Every flight afterward will be focused on achieving the target apogee.

Additional Comments